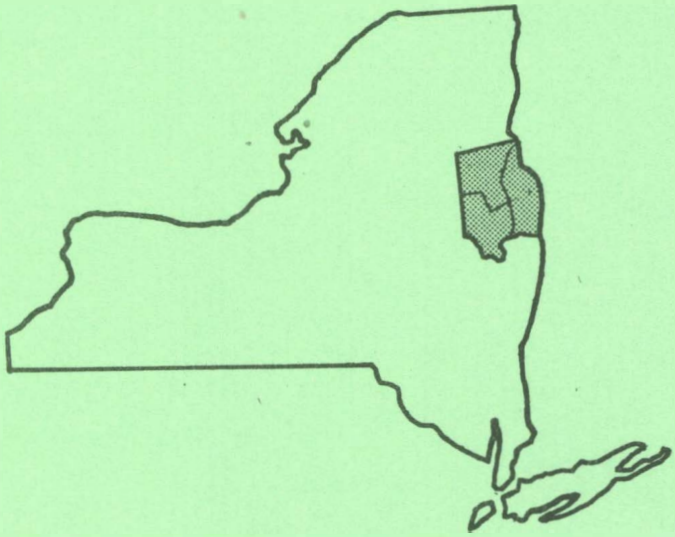
Forest Statistics for

NEW YORK

Forest District No. 11



Forest Statistics Series:
New York No. 11

Northeastern Forest Experiment Station

Upper Darby, Pennsylvania
Ralph W. Marquis, Director

1954

United States Department of Agriculture • Forest Service

FOREWORD

This is the eleventh in a series of reports about forest areas and timber volumes in the State of New York. These reports are products of the forest survey of the Northeast, carried on by the Northeastern Forest Experiment Station as part of the nationwide forest survey being made by the Forest Service, U. S. Department of Agriculture.

A similar report has been prepared for each of the other forest districts in the State of New York. The primary purpose of these reports is to provide basic forest statistics for the administrative use of the New York Department of Conservation.

The New York Department of Conservation aided the Northeastern Station greatly in the forest survey of the State. The Department not only provided the aerial photographs used in the survey, but also cooperated in many other phases of the work.

Field work in Forest District No. 11 was supervised by N. B. Griswold. The statistical procedures for obtaining field-inventory data were developed by C. Allen Bickford. Computations were made under the supervision of Roland H. Ferguson.

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Director

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FOREST STATISTICS FOR NEW YORK FOREST DISTRICT NO. 11

Prepared by

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GENERAL

New York Forest District No. 11 lies in the east-central portion of the State. Bordering on Vermont, it extends from the Mohawk River northward to Lake George. It includes Saratoga County, Warren County, and Washington County.

The northwestern corner of the District is in the Adirondack Park.[1] The topography here is rugged and mountainous. The southeastern corner, which lies mostly in the Champlain-Hudson Valley, is flat to gently rolling, becoming more hilly closer to Vermont. A little more than three-fourths of the forest land drains into the Hudson and Mohawk Rivers. The rest drains into Lake Champlain.

Agriculture is important in the southeastern part of the District. Dairying is the principal type of agriculture here. There is some fruit production. Pulp mills account for a large part of the industrial activity.

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[1] THE ADIRONDACK PARK AS SHOWN ON MAPS OF NEW YORK STATE INCLUDES BOTH STATE AND PRIVATE LANDS.

Forest Area

Forest District No. 11 has a total land area of about 1,622,000 acres. A little more than 969,000 acres are forest land. Noncommercial forest land totals about 199,000 acres, of which 198,000 are in the State Forest Preserve.[2] The rest is in the Saratoga National Historical Park. There is little or no nonproductive forest land.

The commercial forest-land area amounts to slightly more than 770,000 acres. Washington County has about a fourth of the total forest land. The rest is almost equally divided between the other two counties.

Ownership

Farmers own about a fourth of all the commercial forest land in private ownership. The remainder is in industrial and other nonfarm ownership. Only 2 percent of the commercial forest land is public. Municipal and State holdings are about equal and county holdings are the smallest. State Forest[3] acreage in this District is small. There is no Federal forest land here.

Forest Types

Hardwood types are found on 72 percent of the forest land. The sugar maple-beech-yellow birch type is the most extensive, occupying 38 percent of the total area. Oak and oak-white pine types occur on 10 percent. The softwood types are predominantly white pine and white pine-hardwood (16 percent) and hemlock (7 percent).

Forest Stands

Half the board-foot volume is found in sawtimber stands of more than 5,000 board feet per acre. The area of these stands makes up only 14 percent of the total commercial forest land. It is an area less than half that occupied by the light sawtimber stands.

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[2] THE STATE FOREST PRESERVE COMPRISES LANDS OWNED BY THE STATE IN THE 12 FOREST PRESERVE COUNTIES IN THE ADIRONDACKS AS DEFINED BY LAW.

[3] OUTSIDE THE LIMITS OF THE ADIRONDACK PARK AND NOT SUBJECT TO THE CONSTITUTIONAL PROHIBITION AGAINST CUTTING, WHICH APPLIES TO THE STATE FOREST PRESERVE LANDS.

Poletimber stands are found on 34 percent of the forest area; and seedling-and-sapling stands on 18 percent, of which a fifth is poorly stocked.

Timber Volume

The commercial forests contain 1.9 billion board feet (log scale, International $\frac{1}{4}$-inch rule) of live sawtimber. Hardwoods account for 56 percent of the total board-foot volume. The northern hardwoods make up 30 percent of the total and red oak about 9 percent. The dominant softwood species, white pine and hemlock, make up 42 percent of the total sawtimber volume.

The growing stock amounts to 796 million cubic feet. About 488 million cubic feet are in sawtimber trees and 308 million in poletimber trees. The total cubic volume is equivalent to nearly 10 million rough standard cords.

Blowdown Damage

The survey was completed before the severe windstorm of November 25, 1950. The storm changed the stand-size distribution, the volume of timber, and the growing stock. While estimates of damage have been prepared from basic data provided by the New York State College of Forestry, the amount of damage has not been deducted from the accompanying tables because there is no satisfactory way of distributing the loss by forest type or species.

There are 19,500 acres of forest land on which there is some windthrown timber. Of this, about 2,900 acres are commercial forest land. The remaining 16,600 acres are in the State Forest Preserve.

Of the total blowdown area in the commercial forest land, about 900 acres had only light windthrow, not enough to change the stand-size class of the stand. Heavier windthrow occurred on 2,000 acres, of which 1,800 acres were in sawtimber stands and 200 acres in poletimber stands. Of the 1,800 acres in sawtimber stands, 1,000 acres were changed tc poletimber and seedling-and-sapling stands.

There was a total loss of 8.4 million board feet (less than 1 percent of the total board-foot volume) of sawtimber on the commercial forest land. The volume of windthrown sawtimber in the sawtimber stands amounted to 8.2

million board feet. The volume in sawtimber stands is further reduced by the amount of standing timber on the 1,000 acres which changed from sawtimber stand-size classes to poletimber and seedling-and-sapling stands. The greatest loss in sawtimber was in Warren County--6.7 million board feet. Of the total growing stock, 2.9 million cubic feet (less than 1 percent) were blown down.

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Table 1.--Land area by major classes, 1950

Class of land[1]	Area	
	Acres	Percent
Forest land:		
Commercial	770,100	48
Noncommercial[2]	199,400	12
All forest land	969,500	60
Nonforest land	652,300	40
All land[3]	1,621,800	100

[1]See Appendix for definitions.

[2]Includes 875 acres of forest land in the Saratoga National Historical Park. Also includes the net forest land, excluding water areas, in the State Forest Preserve. Total area of the Preserve in this District amounts to 229,339.49 acres. State ownership figures are as of September 30, 1952.

[3]Census of Agriculture, 1950. Water areas of 1 to 40 acres are included in the estimate of nonforest acreage.

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Table 2.--Land area and commercial forest-land area by county, 1950

County	Land area	Commercial forest-land area	
	Acres	Acres	Percent
Saratoga	521,000	276,800	53
Warren	565,100	289,200	51
Washington	535,700	204,100	38
All	1,621,800	770,100	48

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Table 3.--Commercial forest-land area by ownership, 1950

Ownership class	Acreage held	
	Acres	Percent
Private:		
Farm forest land[1]	183,300	24
Other private	573,300	74
Total private	756,600	98
Public:		
Municipal	5,100	1
State[2]	4,900	1
County	3,500	(3/)
Total public	13,500	2
All ownerships	770,100	100

[1]Census of Agriculture, 1950.

[2]Includes 1,833.14 acres in State Forests and 810 acres in Game Management Areas administered by the New York State Conservation Department. Also includes 2,211 acres in the Pack Forest. All State ownership figures are as September 30, 1952.

[3]Less than 1 percent.

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Table 4.--Commercial forest-land area by forest type, 1950

Forest type	Area	
	Acres	Percent
White pine	88,400	11
Hemlock	51,400	7
White pine-hardwood	37,300	5
Other softwood types	34,900	5
Sugar maple-beech-yellow birch	296,300	38
Aspen	76,400	10
Red oak	58,900	8
Hardwood-white pine types	41,800	5
Other hardwood types	84,700	11
All types	770,100	100

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Table 5.--Commercial forest-land area by forest-type group and stand-size class, 1950

Forest-type group	Saw-timber stands	Pole-timber stands	Seedling-and-sapling stands and other areas	Total area
	Acres	Acres	Acres	Acres
White pine	49,300	25,900	13,200	88,400
Other softwood types	83,900	39,700	(1/)	123,600
Sugar maple-beech-yellow birch	162,500	105,300	28,500	296,300
Aspen	(1/)	16,200	60,200	76,400
Other hardwood types	76,200	72,800	36,400	185,400
All types	371,900	259,900	138,300	770,100
Percent	48	34	18	100

[1]No sample plot fell into this classification.

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Table 6.--Commercial forest-land area by stand-size class and watershed, 1950

Stand-size class	Watershed		Total
	Hudson River[1]	Lake Champlain tributaries	
	Acres	Acres	Acres
Sawtimber stands:			
More than 5,000 board feet per acre	77,500	30,600	108,100
1,500 to 5,000 board feet per acre	208,600	55,200	263,800
Poletimber stands:			
More than 600 cubic feet per acre	107,600	26,300	133,900
200 to 600 cubic feet per acre	84,100	41,900	126,000
Other	121,500	16,800	138,300
Total	599,300	170,800	770,100
Percent	78	22	100

[1]Includes 21,400 acres in the Mohawk River watershed.

Table 7.--Net volume of live timber on commercial forest land by species, 1950

Species	Growing stock[1]		Saw-timber[2]
	Thousand cu.ft.	Equivalent in cords	Thousand bd.ft.
White pine	165,500	2,068,800	525,800
Hemlock	105,800	1,322,500	282,700
Spruce	11,200	140,000	28,500
Other softwoods	18,800	235,000	17,600
All softwoods	301,300	3,766,300	854,600
Sugar maple	113,800	1,422,500	253,100
Red oak	63,900	798,700	178,300
Yellow birch	64,200	802,500	167,300
Beech	54,500	681,200	162,300
Ash	33,700	421,300	84,200
Red maple	48,300	603,700	73,200
Paper birch	45,200	565,000	40,900
Aspen	22,700	283,800	29,900
Elm	13,800	172,500	26,900
Basswood	8,900	111,200	19,100
Other hardwoods	25,900	323,800	39,800
All hardwoods	494,900	6,186,200	1,075,000
All species[3]	796,200	9,952,500	1,929,600

[1]Includes sawtimber. Cord equivalent in rough standard cords is assumed to average 80 cubic feet of peeled wood.

[2]Log scale, International $\frac{1}{4}$-inch rule.

[3]Excludes the net volume of cull trees--16,200,000 cubic feet.

Table 8.--Net volume of live timber on commercial forest land by diameter class, 1950

Diameter class[1] (in inches at breast height)	Growing stock	Saw-timber
	Thousand cu.ft.	Thousand bd.ft.
Softwoods:		
6	30,900	--
8	43,500	--
10	44,000	142,700
12	54,500	203,400
14	46,600	178,300
16	33,600	131,400
18	16,900	69,100
20	9,500	42,700
22	11,000	43,400
24 +	10,800	43,600
All softwoods	301,300	854,600
Hardwoods:		
6	65,600	--
8	81,100	--
10	87,400	--
12	79,200	295,300
14	62,000	245,900
16	48,900	193,100
18	34,300	158,900
20	15,000	77,100
22	7,700	36,300
24 +	13,700	68,400
All hardwoods	494,900	1,075,000
Total	796,200	1,929,600

[1] The midpoint of each 2-inch diameter class is indicated.

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Table 9.--Net volume of live timber on commercial forest land by forest type, 1950

Forest type	Growing stock		Saw-timber
	Thousand cu.ft.	Equivalent in cords	Thousand bd.ft.
White pine	115,700	1,446,200	351,700
Hemlock	96,800	1,210,000	261,800
White pine-hardwood	49,700	621,200	137,500
Spruce-fir and spruce-fir hardwood	9,000	112,500	20,800
Other softwood types	17,700	221,300	21,600
Sugar maple-beech-yellow birch	325,200	4,065,000	783,300
Red oak	68,200	852,500	154,900
Northern hardwood-white pine	31,500	393,800	82,000
Ash-elm-maple	23,000	287,500	54,600
Oak-white pine	22,200	277,500	43,600
Other hardwood types	37,200	465,000	17,800
All types	796,200	9,952,500	1,929,600

Table 10.--Average net volume of live timber per acre of commercial forest land, by stand-size class, 1950

Stand-size class (and acreage of each class)	Growing stock	Sawtimber
	Cubic feet	Board feet
Sawtimber stands:		
More than 5,000 bd.ft. per acre (108,100 acres)	2,640	8,970
1,500 to 5,000 bd.ft. per acre (263,800 acres)	1,260	2,980
Poletimber stands:		
More than 600 cu.ft. per acre (133,900 acres)	770	640
200 to 600 cu.ft. per acre (126,000 acres)	430	380
Other[1] (138,300 acres)	160	290
Average, all classes[2] (770,100 acres)	1,030	2,510

[1]Includes seedling-and-sapling stands and non-stocked areas.

[2]Hardwoods constitute 62 percent of the total volume. The average cubic volume in all stand-size classes is equivalent to 13 cords per acre.

APPENDIX

DEFINITIONS OF TERMS

Forest Areas

Forest-land area.--Includes (a) lands that are at least 10 percent stocked by trees of any size and capable of producing timber or other wood products, or of exerting influence on the climate or on the water regime; (b) land from which the trees described in (a) have been removed to less than 10 percent stocking and which has not been developed for other use; and (c) afforested areas. (Forest tracts of less than 1 acre, isolated strips of timber less than 120 feet wide, and abandoned fields and pastures not yet 10 percent stocked are excluded.)

Commercial forest-land area.--Forest land that is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or prospectively, and (c) not withdrawn from timber utilization.

Noncommercial forest-land area.--Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, and (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions.

Forest Types

Forest types are classified according to the species or species group that accounts for the major portion of the stand in terms of cubic feet in sawtimber and poletimber stands, or the number of stems in seedling-and-sapling stands.

Stand-Size Classes

Sawtimber stands.--Stands with sawtimber trees having a minimum net volume per acre of 1,500 board feet, International $\frac{1}{4}$-inch rule.

Poletimber stands.--Stands failing to meet the sawtimber stand specification, but at least 10 percent stocked with poletimber and larger (5.0 inches and larger) trees, and with at least half the minimum stocking in poletimber trees. (Poletimber stands carry at least 200 cubic feet per acre.)

Seedling-and-sapling stands.--Stands not qualifying as either sawtimber or poletimber stands, but having at least 10 percent stocking of trees of commercial species and with at least half the minimum stocking in seedling-and-sapling trees.

Other areas.--Forest-land areas not qualifying as sawtimber, poletimber, or seedling-and-sapling stands. (Includes nonstocked areas.)

Tree Classes

Sawtimber trees.--Trees of commercial species that contain at least one merchantable sawlog as defined by regional practice and that are of the following minimum diameters at breast height (d.b.h.): Softwoods 9.0 inches and hardwoods 11.0 inches. (All butt sawlogs are considered merchantable. Where the butt is defective, upper sawlogs are considered merchantable if they account--in terms of aggregate net volume--for 50 percent or more of the gross volume below the top of the uppermost sawlog. Softwood sawlogs are at least 6.0 inches in diameter inside bark at small end; 8 to 16 feet in length; sound and straight enough to be manufactured into standard lumber. The smaller logs are generally free of surface defects other than small tight knots. Hardwood sawlogs are at least 8.0 inches in diameter inside bark at small end; 8 to 16 feet in length; suitable for sawing into standard lumber, construction timbers, or ties.)

Poletimber trees.--Trees 5.0 inches d.b.h. and larger of commercial species that do not meet the specifications for sawtimber trees but do meet regional specifications of species, soundness, and freedom from defect. (These are the trees that are straight and clear enough to make sawtimber trees eventually.)

Seedling-and-sapling trees.--Trees of commercial species less than 5.0 inches in diameter at breast height.

Cull trees.--Live trees of sawtimber or poletimber size that are unmerchantable for sawlogs now or prospectively because of defect, rot, or species.

Timber Volume

Growing stock.--Net volume, in cubic feet, of live sawtimber trees and live poletimber trees from stump to a minimum 4.0-inch top (of central stem) inside bark.

This volume is also given in rough standard cords (bark included). Cord volume is derived from growing stock by applying a factor of 80 cubic feet per cord.

Live sawtimber volume.--Net volume in board feet, International $\frac{1}{4}$-inch rule, of live sawtimber trees.

FOREST-SURVEY METHODS

These forest statistics are based on information gathered from aerial photographs and from sample plots examined on the ground.

First, photo-interpretation plots were marked off on the aerial photographs. These plots were distributed uniformly by mechanical means over photographs of the entire district. Trained photo-interpreters then classified each photo-plot as either forest or nonforest. Forest plots were classified further according to stand-size and forest type.

Field crews inspected some of the photo-plots on the ground. Enough plots were selected at random so as to attain a specified level of statistical accuracy. Species and volume data were collected on these ground plots; and the photo classification of stand size and forest type was verified or--if necessary--changed.

The survey was designed for maximum efficiency in estimating total cubic volume to meet the national standards of accuracy.

ACCURACY OF THE ESTIMATES

The estimates in this report may contain two kinds of error. First, photo-interpreters may make mistakes of judgment and fieldmen may make mistakes in measuring or record-

ing. There is no practical way of finding out just how often such errors occur. But they are kept to a minimum by closely checking all phases of the work.

The second kind of error is associated with sampling procedures. The size of this sampling error can be measured. In Forest District No. 11 the probabilities are 2 out of 3 that the actual forest area is within ± 1.7 percent of the estimated forest area, that the actual cubic-foot volume is within ± 5.3 percent of the estimated cubic-foot volume, and that the actual board-foot volume is within ± 9.5 percent of the estimated board-foot volume. This does not include any mistakes in measurement or classification.

These percentages show that the area estimates are more accurate than the volume estimates, and that the cubic-foot estimates are more accurate than the board-foot estimates.

In each of the tables, the total figures are more accurate than the subtotals. The subtotals are more accurate than any of the individual figures. Figures that are small in relation to totals are subject to larger sampling errors.

SPECIES TALLIED

The various commercial tree species tallied in New York Forest District No. 11 are listed below. Approved common names[4] are shown in parentheses if these differ from the brief name used in the tables. Other tree species may occur in the area, but unless they were tallied on the field plots they were not included in the following list.

Softwoods

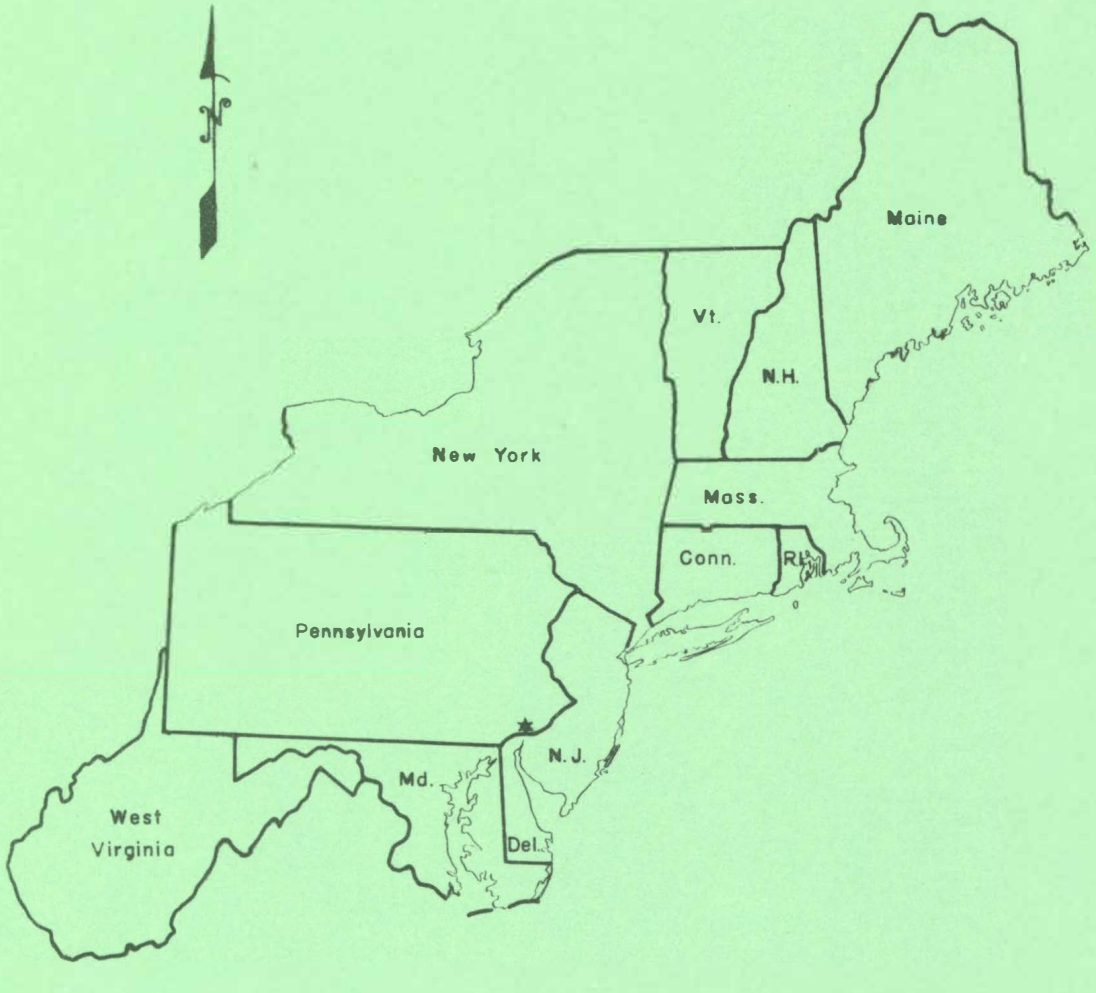
White pine (Eastern white pine)	- Pinus strobus
(Red pine)	- Pinus resinosa
Hemlock (Eastern hemlock)	- Tsuga canadensis
Spruce (White spruce)	- Picea glauca
(Red spruce)	- Picea rubens

[4] LITTLE, ELBERT L., JR. CHECK LIST OF NATIVE AND NATURALIZED TREES OF THE UNITED STATES (INCLUDING ALASKA). U. S. DEPT. AGR., AGR. HANDB. 41, 472 PP. 1953

Other softwoods	
(Balsam fir)	- Abies balsamea
(Pitch pine)	- Pinus rigida
(Northern white-cedar)	- Thuja occidentalis
(Tamarack)	- Larix laricina

Hardwoods

Sugar maple	- Acer saccharum
Red oak (Northern red oak)	- Quercus rubra
(Scarlet oak)	- Quercus coccinea
Yellow birch (Yellow birch)	- Betula alleghaniensis
(Sweet birch)	- Betula lenta
Beech (American beech)	- Fagus grandifolia
Ash	- Fraxinus species
Red maple (Red maple)	- Acer rubrum
(Silver maple)	- Acer saccharinum
Paper birch	- Betula papyrifera
Aspen (Bigtooth aspen)	- Populus grandidentata
(Quaking aspen)	- Populus tremuloides
Elm	- Ulmus species
Basswood (American basswood)	- Fagus grandifolia
Other hardwoods	
(White oak)	- Quercus alba
(Chestnut oak)	- Quercus prinus
(Hickory)	- Carya species
(Black walnut)	- Juglans nigra
(Black locust)	- Robinea pseudoacacia
(Butternut)	- Juglans cinerea
(Black cherry)	- Prunus serotina



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